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W. A. KELLERMAN, Ph. D. OHIO STATE UNIVERSITY

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Mycological Bulletin

Nos. 63-64

W. A. Kellerman, Ph. D., Ohio State University
Columbus, August, 1906

BY WAY OF EXPLANATION.

We are favored again with a short article by Superintendent Hard and are able to reproduce one of his photographs illustrating the subject.

We have to thank also Professor Atkinson, whom we draw upon again for some interesting statements as to the uses of Mushrooms, which he has published in his excellent book, Mushrooms, Edible and Poisonous.

Other Figures which we present are a neat little *Marasmius*, which we do not want to eat, but do want to look at (beauty is its own excuse for being). Then the *Mycena* follows—another charming little plant of the woods; the *Pluteus cervinus*, which we have once before illustrated, all ought to know (it has pinkish gills, the color deepening after the cap has expanded for a time—they are white at first: the stem can be easily twisted out of a socket-like cavity)—this medium-sized Mushroom being one among the best edible species; then the last page shows one of the Puffballs—*Scleroderma* as it is called rightly, because it has a *hard* wall or covering.

CORRECTION.—A regrettable mistake in regard to placing one of the illustrations in the last number was made, and readers are therefore requested kindly to change the name Panæolus campanulatus (Fig. 191) to *Stro-pha'-ri-a sem-i-glo-bo'-sa.* The correct half-tone of Panæolus campanulatus will be given in a future number.

A WORD ABOUT PLEUROTUS ULMARIUS

M. E. Hard.
Columbus, Ohio, August, 1906.

The pileus is from two to fourteen inches across, obtuse, smooth, sometimes scaly, very white within, compact, thick, sometimes inclined to be marbled with livid spots, moist, margin smooth or even.

The gills are adnate, sometimes slightly decurrent, sometimes slightly notched, somewhat crowded, broad, white or whitish.

The stem is often eccentric, two to three inches long, one inch thick, usually curved as in the figure, solid, firm, thickened at the base, smooth, sometimes tomentose, especially at the base. The spores are nearly round, the diameter being .0002 in.

This plant usually grows on elm logs yet I have found it on hickory

logs and stumps. It is very meaty and sweet, one of our best mushrooms to eat. It sometimes grows very large and one plant will make several meals.

It is a later grower than the oyster mushroom. I have never found it till late in the summer and in the fall. It is frequently found in the cities where the elm trees have ben trimmed or injured.

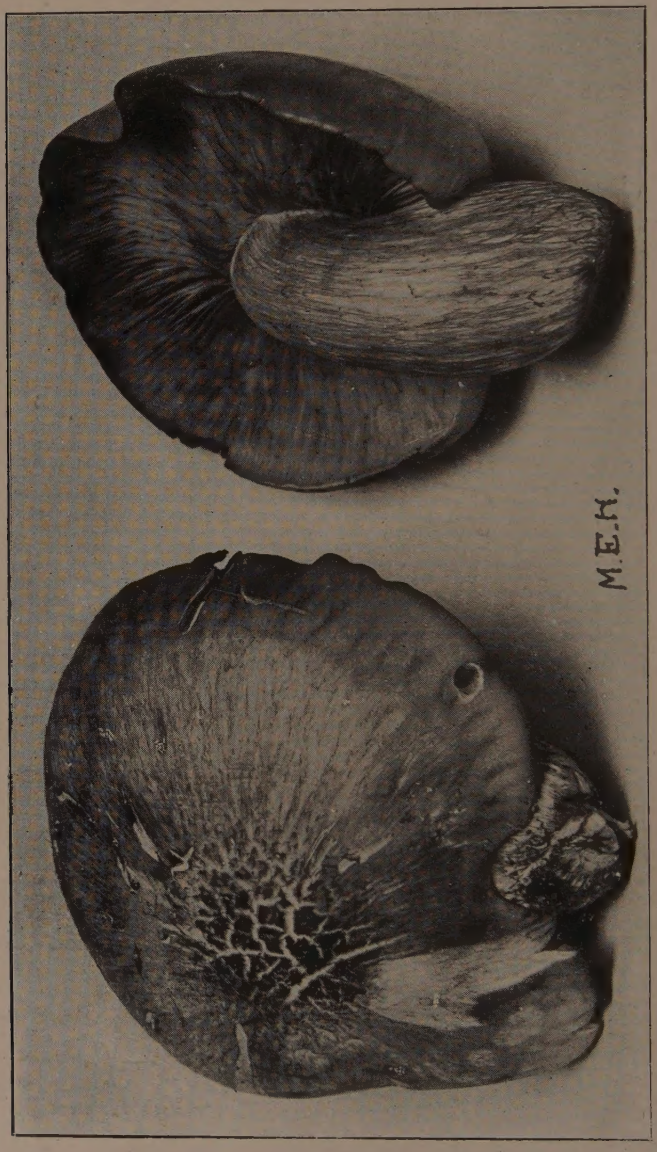

Fig. 195. P EU-RO'-TUS UL-MA'-RI-US. For explanation see Supt. Hard's article.

NOTES FROM MUSHROOM LITERATURE. II.

W. A. Kellerman.

MUSHROOM REPORT FROM SWITZERLAND.—In the report of the Botanical Garden and Museum of Zurich, Switzerland, for 1904, an account is given of the sale of Mushrooms in the market of that city. Sale can be made only upon authorization, and 606 permits were granted during the season. The greatest sale was on the 27th of September, on which day 40 permits were granted for the sale of 8 species. Six interdictions were served on sellers who offered the folowing poisonous or spoiled Mushrooms: Amanita muscaria, Lactarius rugis, Lactarius piperatus, Boletus edulis and Clavaria flava.

The amount sold reached 5,000 k. The species were the following: Lactarius deliciosus, Amanita cæsarea, Agaricus campestris, Hydnum coralloides, Boletus badius (?), Boletus aurantiacus (?), Boletus edulis, Lactarius volemus, Lactarius piperatus, the Morelle, Lepiota procera, Pluteus cervinus (?), Polyporus sulfureus, Russula sp., Lycoperdon sp., Hydnum repandum, Craterellus cornucopioides and Tuber cibarium.

The reviewer who furnished the above items says in substance the following by way of general comment: It would be very useful to have similar statistical tables systematically made in all the more important cities. One would then have data for a report on the geographical distribution of the edible Mushrooms, and at the same time information as to the quantity consumed. It may be remarked also that it is imperative in reports of this kind, to designate the species by their Latin names as well as by their common names; foreigners could then without difficulty identify the species—often a task, or impossible, if only the common name is given.

MUSHROOMS SOLD AT NANTES.—A list of species of Mushrooms sold

FIG. 196. MA-RAS'-MI-US RA-ME-A'-LIS. One of the many beautiful species of an interesting genus of plants. The specimens were collected by Supt. Hard, Chillicothe, Ohio.

at Nantes, France, in 1905, furnished by M. Baret, is as follows: Amanita cæsarea, Lepiota procera, Lepiota rhacodes, Lepiota excoriata, Lepiota pudica, Psalliota pratensis, Psalliota sylvatica, Psalliota bernardii, Clitopilus orcella, Marasmius oreades, Lentinus tigrinus, Tricholoma personatum, Clitocybe laccata, Boletus edulis, Boletus æstivalis, Boletus æreus, Boletus scaber, Boletus scaber var. aurantiacus, Boletus luteus, Fistulina hepatica, Hydnum repandum, Craterellus cornucopioides, and Lycoperdon giganteum.

THE GENUS CORTINARIUS.—Some excellent work has been done on this genus by C. H. Kauffman, at Cornell University, during the past three seasons, the results of which in part are published in the Bulletin of the Torrey Botanical Club for June, 1905. In a future number we propose to refer more fully to the article and will here only reproduce the descriptions of a few of the new species therein contained. These pertain to interesting plants. Mr. Kauffman says it is absolutely useless to pick up an old dried specimen of Cortinarius and ask any one to recognize it. In the majority of cases old plants of different species look so much alike that it is mere guessing to say anything about them. The first thing to remember (he says) is that young, unexpanded plants must be examined as well as mature ones. Next, a careful description must be made *with special reference to the color of the gills of the young* plants. But the remaining space must be given to some of his new species—these model descriptions being as follows:

CORTINARIUS STERILIS *Kauffman n. sp.*—Pileus 1.5—4.5 cm. broad, suborbicular when young, then convex-expanded, margin incurved, drab, drab-gray to olive-buff [Ridgeway's Nomenclature], even, smooth, *viscid*, somewhat umbonate at times, flesh white, soft, thin. Gills relatively broad, 4.6 mm., drab-gray (Ridg.) at first, then light cinnamon, rounded behind, then emarginate, not at all ventricose, rather crowded; edge serrulate and white, later eroded, *provided with sterile cells*. Cortina white or sordid. Stem 4 to 8 cm. long, 4-6 mm. thick at base 10 mm., hence clavate or tapering upward, solid, spongy, dingy-white, tinged towards apex with light blue, clothed when fresh with the delicate patches of the *viscid*, universal veil, which is of the same color as the pileus, within pale bluish at apex, white below. Spores 6-7x5-6.5 mic., subsphæroid, rather smooth. Plants slender.

CORTINARIUS CYLINDRIPES *Kauffman n. sp.*—Pileus 3-7 cm. broad, *very glutinous at first* and shining, later opaque, at the very first lavender, then yellowish with a violaceous tinge, at length becoming brownish-ochraceous, with the appearance of being stained with these colors at various stages, obtusely orbicular when young, then campanulate and expanded, rather small in comparison with the length of the stem; margin incurved and pellucid-striate; surface smooth, at length longitudinally wrinkled. Flesh thick on disk, thin elsewhere, violaceous, soon dingy white. Gills rather broad, at length 5/8 mm., adnate, emarginate, not attenuate toward margin of pileus, *violaceous or lavender when young*, becoming pale cinnamon, not crowded, thin, edge serrulate and paler, somewhat wrinkled at the sides but not veined. Stem 8-10 cm. long, 5-9 mm. thick, elastic, *remarkably equal*, covered by a violaceous, *glutinous*, universal veil which sometimes remains as evanescent patches and at its junction with the partial veil as a slight annulus, smooth or fibrillose-striate at apex, violaceous or dingy-white within, solid or stuffed; *entire* stem usually a beautiful pale, azure blue. Spores 12-1 x6.5-8 mic., slightly tuberculate; basidia about 10 mic. long.

Gregarious, rarely cespitose. Entire plant is soft and quickly decays.

Related to *C. elatior*, from which it differs in its equal stem, which is never scaly and is always violaceous to blue; the gills are lavender when young and the whole plant is very viscous.

CORTINARIUS OLIVACEO-STRAMINEUS *Kauffman n. sp.*—Pileus 4-7 cm. broad, viscid from a gelatinous cuticle, broadly convex, slightly depressed in the centre when expanded, margin incurved for some time, *pale straw-yellow with an olivaceous tinge,* slightly rufous-tinged when old, smooth or silky-fibrillose, disk sometimes covered with minute squamules, shreds of the partial veil attached to the margin when expanded. Flesh *very thick,* becoming abruptly thin toward the margin, white, dingy-yellowish in age, *soon soft and spongy.* Gills rather narrow, 7 mm. broad, sinuate-adnexed, whitish at first, then pale cinnamon, crowded, edge serratulate and paler. Stem 6-8 cm. long, 5-12 mm. thick, with a slight bulb when young, from whose margin arises the dense partial veil; white and very pruinate above the veil, which remains as dingy fibrils stained by the spores, spongy and *soft* within, becoming somewhat hollow. Veil white with an olive tinge. Spores 10-12 x 5.5-6.5 mic., granular within, almost smooth. Odor agreeable.

To be placed under the division *"scaurus"*; where it comes near *C. harpeticus* Fr., but the gills when young are never violet-tinged.

Fig. 197. MY-CE'NA GA-LER-IC-U-LA'-TA. Little plants that grow on rotten wood in shady, moist places; common and abundant throughout the season. Said to be edible.

Fig. 198. PLU'-TE-US CER-VI'-NUS. Edible. A rosy-spored Agaric, without volva or annulus; common and widely distributed, growing on rotten wood under the ground, on stumps, and still more abundant on old piles of sawdust. The specimens from whihc the half-tone was made were collected at Chillicothe, Ohio.

USES OF MUSHROOMS.

Geo. F. Atkinson, Cornell University.

While we are thus apt to regard many of the mushrooms as enemies to the forest, they are, at the same time, of incalculable use to the forest. The mushrooms are nature's most active agents in the disposal of the forest's waste material. Forests that have developed without the guidance of man have been absolutely dependent upon them for their continued existence. Where the species of mushrooms are comparatively few which attack living trees, there are hundreds of kinds ready to strike into fallen timber. There is a degree of moisture present on the forest floor exactly suited to the rapid growth of the mycelium of numbers of species in the bark, sap wood, and heart wood of the fallen trees or shrubs. In a few years the branches begin to crumble because of the disorganizing effect of the mycelium of the wood. It gradually passes into the soil of the forest floor, and is made available food for the living trees. How often one notices that seedling trees and shrubs start more abundantly on rotting logs.

The fallen leaves, too, are seized upon by the mycelium of a great variety of mushrooms. It is through the action of the mycelium of mushrooms of every kind that the fallen forest leaves, as well as the trunks and branches, are converted into food for the living trees. The fungi, are, therefore, one of the most important agents in providing available food for the virgin forest.

The spawn of some fungi in the forest goes so far, in a number of cases, as to completely envelope those portions of the roots of certain trees as to prevent the possibility of the roots taking up food material and moisture on their own account. In such cases, the oaks, beeches, horn-beams, and the like, have the younger parts of their roots completely enveloped with a dense coat of mycelium. The mycelium in these cases absorbs the moisture from the soil or forest floor and conveys it over to the roots of the tree, and in this way supplies them with both food and water from the decaying humus, the oak being thus dependent on the mycelium. In the fields, however, where there is not the abundance of humus and decaying leaves present in the forest, the coating of mycelium on the roots of these trees is absent, and in this latter case the young roots are provided with root hairs which take up the moisture and food substances from the soil in the ordinary way.

The mushrooms also prevent the forest from becoming choked or strangled by its own fallen members. Were it not for the action of the mushroom mycelium in causing the decay of fallen timber in the forest, in time it would be piled so high as to allow only a miserable existence to a few choked individuals. The action of the mushrooms in thus disposing of the fallen timber in the forests, and in converting dead trees and fallen leaves into available food for the living ones, is probably the most important role in the existence of these plants. Mushrooms, then, are to be given very high rank among the natural agencies which have contributed to the good of the world. When we contemplate the vast areas of forest in the world we can gain some idea of the stupendous work performed by the mushrooms in "house cleaning," and in "preparing food," work in which they are still engaged.

—*Mushrooms, Edible, Poisonous, Etc.*

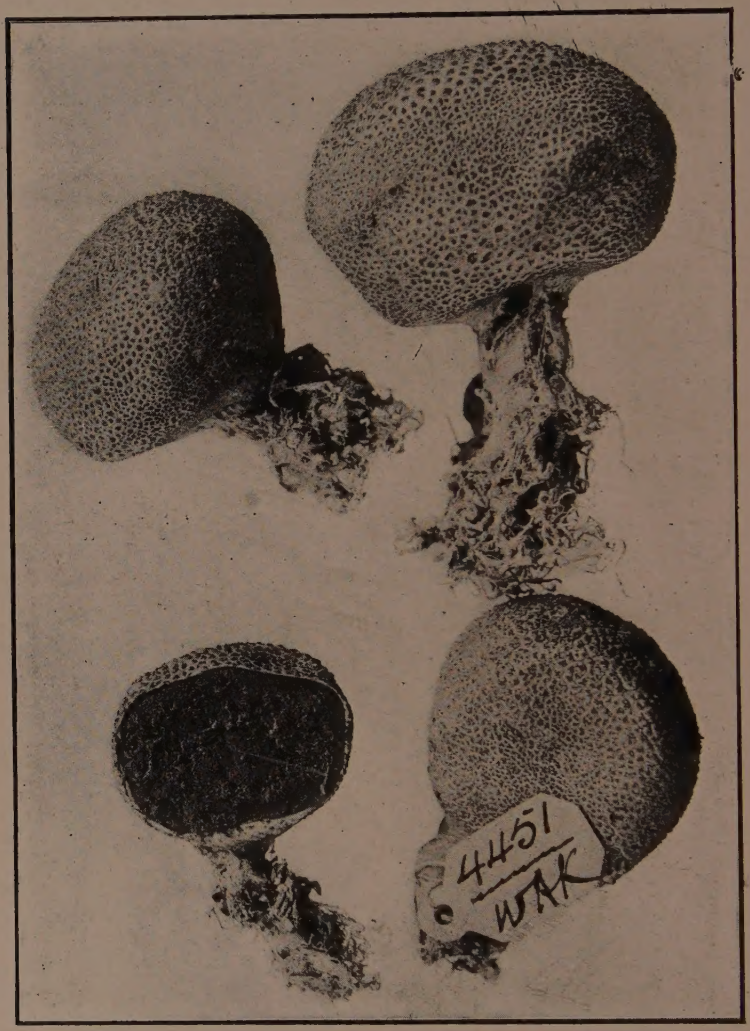

Fig. 199. .SCLER-O-DER'-MA VUL-GA'-RE.. A puff-ball with a firm, corky, warty wall or covering, growing in sandy soil or clay, in sheltered places, seldom on wood. The plants from which the photo was made were collected at Columbus, Ohio. This species is widely distributed, occuring in Europe, Africa, and Australia as well as in North America. It was known to the early botanists and has been repeatedly renamed, the following being some of the synonyms: *Lycoperdon cervinum, L. aurantiacum, L. tessellatum, Scleroderma citrinum, S. aurantiacum.*

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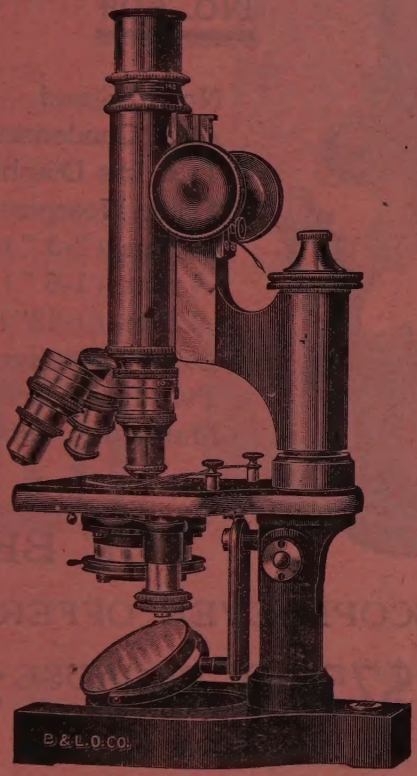

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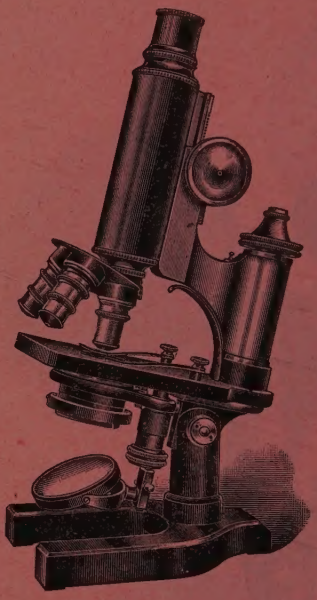

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